

Frequently Asked Questions about Immunizations

What do immunizations do?

Vaccines work by preparing a child's body to fight illness. Each immunization contains either a dead or a weakened germ, or parts of it, that cause a particular disease. The body practices fighting the disease by making antibodies that recognize specific parts of that germ. This permanent or longstanding response means that if someone is ever exposed to the actual disease, the antibodies are already in place and the body knows how to combat it and the person doesn't get sick. This is called immunity.

Will my child's immune system be weaker by relying on a vaccine?

No, the immune system makes antibodies against a germ, like the chickenpox virus, whether it encounters it naturally or is exposed to it through a vaccine.

Will the immunization give someone the very disease it's supposed to prevent?

This is one of the most common concerns about vaccines. However, it's impossible to get the disease from any vaccine made with dead (killed) bacteria or viruses or just part of the bacteria or virus. Only those immunizations made from weakened (also called attenuated) live viruses — like the chickenpox (varicella) or measles-mumps-rubella (MMR) vaccine — could possibly make a child develop a mild form of the disease, but it's almost always much less severe than the illness that occurs when a person is infected with the disease-causing virus itself. However, for children with weakened immune systems, such as those being treated for cancer, these vaccines may cause problems. The risk of disease from vaccination is extremely small. One live virus vaccine that's no longer used in the United States is the oral polio vaccine (OPV). The success of the polio vaccination program has made it possible to replace the live virus vaccine with a killed virus form known as the inactivated polio vaccine (IPV). This change has completely eliminated the possibility of polio disease being caused by immunization in the United States.

Why should I have my child immunized if all the other kids in school are immunized?

It is true that a single child's chance of catching a disease is low if everyone else is immunized. Yet if one person thinks about skipping vaccines, chances are that others are thinking the same thing. And each child who isn't immunized gives these highly contagious diseases one more chance to spread. This actually happened between 1989 and 1991 when an epidemic of measles broke out in the United States. Lapsing rates of immunization among preschoolers led to a sharp increase in the number of measles cases, deaths, and children with permanent brain damage. Even in 2008, the number of cases of measles in the United States more than doubled from recent years. Most of the cases were among people who had not been vaccinated. Similar outbreaks of whooping cough (pertussis) struck Japan and the United Kingdom in the 1970s after immunization rates declined. Although vaccination rates are fairly high in the United States, there's no reliable way of knowing if everyone your child comes into contact with has been vaccinated, particularly now that so many people travel to and from other countries. So, the best way to protect your child is through immunization.

Why should I subject my child to a painful shot if vaccines aren't 100% effective?

Few things in medicine work 100% of the time, but vaccines are one of the most effective weapons we have against disease — they work in 85% to 99% of cases. They greatly reduce your child's risk of serious illness (particularly when more and more people use them) and give diseases fewer chances to take hold in a population.

Can immunizations cause a bad reaction in my child?

The most common reactions to vaccines are minor and include:

- redness and swelling where the shot was given
- fever
- soreness at the site where the shot was given

In rare cases, immunizations can trigger more serious problems, such as seizures or severe allergic reactions. If your child has a history of allergies to food or medication, or has had a problem with a vaccine previously, make sure to let the doctor know before any vaccines are given. Every year, millions of kids are safely vaccinated and almost all of them experience no significant side effects. Meanwhile, research continually improves the safety of immunizations. The American Academy of Pediatrics (AAP) now advises doctors to use a diphtheria, tetanus, and pertussis vaccine that includes only specific parts of the pertussis cell instead of the entire killed cell. This vaccine, called DTaP, has been associated with even fewer side effects.

Do immunizations or thimerosal cause autism?

Numerous studies have found no link between vaccines and autism (a developmental disorder that's characterized by mild to severe impairment of communication and social interaction skills). Likewise, a groundbreaking 2004 report from the Institute of Medicine (IOM) found that thimerosal (an organic mercury compound that's been used as a preservative in vaccines since the 1930s) does not cause autism. Still, some parents have opted not to have their children immunized, putting them at great risk of contracting deadly diseases. The MMR vaccine, especially, has come under fire despite many scientific reports indicating that there's no clear evidence linking the vaccine to autism. In fact, in 2004 a long-disputed 1998 study that suggested a possible link between autism and the MMR vaccine was retracted. Even before the retraction, not only had other studies found no link, but the controversial 1998 study was rejected by all major health organizations, including the AAP, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and the World Health Organization (WHO). There's also no reason to believe that thimerosal is linked to autism, according to the 2004 IOM report. Nevertheless, in an effort to reduce childhood exposure to mercury and other heavy metals, thimerosal began being removed from kids' vaccines in 1999. Now, vaccines for infants and young children contain no or very little thimerosal. And recent studies have not shown any cognitive and behavioral problems in babies who might have received these thimerosal-containing vaccines. So what could explain the increased rates of autism in recent years? For one thing, there's a broader definition of autism that can be applied to more kids who show varying degrees of symptoms. A greater awareness of the condition among health professionals also has led to more diagnoses. And although the number of children diagnosed with autism may be increasing, the rates of MMR vaccination are not. In London, diagnoses of autistic disorders have been on the rise since 1979 but rates of MMR vaccination haven't increased since routine MMR vaccination began in 1988. In addition, the average age of diagnosis of autism has been found to be the same both in children who have and who have not received the MMR vaccine. What many researchers are discovering is that subtle symptoms of autism are often present before a child's first birthday — sometimes even in early infancy — but often go unnoticed until the symptoms are more obvious to parents.

Do immunizations cause SIDS, multiple sclerosis, or other problems?

There are concerns, many of which circulate on the Internet, linking some vaccines to multiple sclerosis, sudden infant death syndrome (SIDS), and other problems. To date, several studies have failed to show any connection between immunizations and these conditions. The number of SIDS cases has actually fallen by more than 50% in recent years, whereas the number of vaccines administered yearly has continued to rise.

Why does my child need to be immunized if the disease has been eliminated?

Diseases that are rare or nonexistent in the United States, like measles and polio, still exist in other parts of the world. Doctors continue to vaccinate against them because it's easy to come into contact with illnesses through travel. That includes anyone who may not be properly immunized who's coming into the United States, as well as Americans traveling overseas. If immunization rates fell, a disease introduced by someone visiting from another country could cause serious damage in an unprotected population. In 1994, polio was brought to Canada from India, but it didn't spread because so many people had been immunized. It's only safe to stop vaccinations for a particular disease when that disease has been eradicated worldwide, as in the case of smallpox.

How long does immunity last after getting a vaccine?

A few vaccines, like the two for measles or the series for hepatitis B, may make you immune for your entire life. Others, like tetanus, last for many years but require periodic shots (boosters) for continued protection against the disease. The whooping cough (pertussis) vaccine also does not give lifelong immunity, and that may be one reason why there are still outbreaks of the disease. And although pertussis isn't a serious problem for older kids and adults, it can be for infants and young children. Because of this, adolescents and adults now receive a pertussis booster along with the tetanus and diphtheria booster (Tdap) — an important step in controlling this infection. It's important to keep a record of vaccinations so the doctor knows when your child is due for a booster. Also make sure your child gets the flu vaccine each year, if it isn't in short supply. Having been immunized last year won't protect someone from getting the flu this year because the protection wears off and flu viruses constantly change. That's why the vaccine is updated each year to include the most current strains of the virus. The flu vaccine reduces the average person's chances of catching the flu by up to 80% during the season. But because the flu vaccine doesn't prevent infection by all of the viruses that can cause flu-like symptoms, getting the vaccine isn't a guarantee that someone won't get sick during the season. But even if someone who's gotten the shot gets the flu, symptoms will usually be fewer and milder.

For more information about vaccines and immunizations, visit the Centers for Disease Control and Prevention's website, <http://www.cdc.gov/vaccines/>.